

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Official Action dated November 4, 2003. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 3-11 are under consideration in this application. Claims 3 and 10 are being amended, as set forth in the above marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim applicants' invention.

Additional Amendments

The Title of the Invention and the claims are being amended to correct formal errors and/or to better disclose or describe the features of the present invention as claimed. All the amendments to the claims are supported by the specification. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Formality Rejection

A new title was requested to better describe the invention. Claims 3-11 were rejected under 35 U.S.C. § 112, first paragraph, as failing to describe the subject matter in such a way that it would enable one skilled in the art to make and/or use the invention. Claims 3-11 were rejected under 35 U.S.C. § 112, second paragraph, on the grounds of being vague and indefinite and omitting essential structural cooperative relationships of elements.

The hybridization device of the invention, as now recited in claim 3 (Fig. 1; Embodiment 1), comprises: a tray 4 provided with a hollow 11 for placing a slide glass 10 having at least one biopolymer fixed thereon; a sheet 6 for fixedly placing a cover glass 8 onto an inner bottom of the tray 4 in the hollow 11, said cover glass 8 being to be covered with the slide glass 10 from above with a sample biopolymer solution 9 sandwiched therebetween; a case 1 for accommodating the tray therein; and a cap for sealing the tray 4 within the case 1.

The invention, as now recited in claim 10 (Fig. 2; Embodiment 2), is also directed to a hybridization device having a tray 13 having a hollow 11 for placing a slide glass 10 having at

least one biopolymer fixed thereon, the tray 13 having a convex 13a protruding (p. 7, line 12) from an inner bottom of the tray 13 into the hollow 11, said convex 13a being fixedly placed with a cover glass 8 thereon, said cover glass 8 being to be covered with the slide glass 10 from above with a sample biopolymer solution 9 sandwiched therebetween; a case 1 for accommodating the tray 13 therein; and a cap for sealing the tray 13 within the case 1.

Applicants respectfully contend claims 3 and 10 as amended are believed to clearly and definitely recite the features of the invention, as well as to be sufficiently enabled by the specification for one skilled in the art to make and/or use the invention. Hybridization reactions and DNA chips utilizing hybridization reactions are well known in the art as disclosed, for example, in U.S. Patent No. 6,482,640. The hybridization device of the invention is a type of so-called DNA chips, which are well-known and already commercially available from several manufacturers. The invention significantly improves other existing DNA chips. However, for the Examiner's consideration, Applicants are submitting a brochure enclosed herewith which introduces users to the features, operational procedure, specification, etc., of the commercialized hybridization device of the invention. The brochure was published in December 2002 (after the US filing date) and reprinted in August 2003.

At the bottom of the brochure is a description of the operational procedure including steps 1 to 8 in Japanese, together with photographs. For reference, these descriptions are translated into English as follows.

Procedure for back-placement method

By disposing the microarray with its reaction surface facing vertically downward, the distance between the reaction surface and the cover glass can be reduced by the weight of the microarray. As a result, sample evaporation can be prevented more efficiently, noise at the cover glass boundary can be reduced, and improvements in reaction efficiency can be achieved. Recommended for researchers looking for ways of achieving higher-quality reaction.

Step 1: Place a cover glass on a silicon sheet in an airtight manner.

Step 2: Set the silicon sheet on a tray.

Step 3: Drop a sample solution on a cover glass

Step 4: Put the microarray.

Step 5: Drop evaporation-preventing water on the back surface of the microarray.

Step 6: Insert the tray into a case.

Step 7: Seal the case by lock-fitting in an airtight manner.

Step 8: Leave the unit in a constant-temperature bath (the picture shows a CHIBIO+).

In particular, the microarray described in step 4 in the brochure is a DNA chip, which corresponds to the slide glass 10 of the invention, and the photograph of microarray in step 4 corresponds to Fig 2A of the invention. Sample solution comes into contact with the microarray in step 4, whereupon hybridization reaction is started. Thus, the brochure shows that the present invention has been commercialized and are already being carried out by those skilled in the art without any problems.

As indicated, the title and the claims have been amended to overcome the informality objections and rejections. Accordingly, the withdrawal of the outstanding informality rejections is in order, and is therefore respectfully solicited.

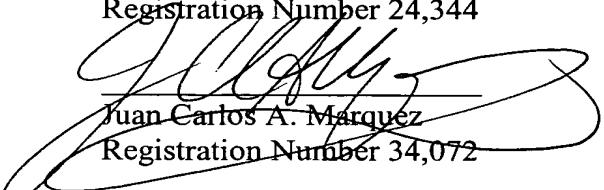
In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicant respectfully contends that the prior art references cannot anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and phone number indicated below.

Respectfully submitted,

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January 28, 2004

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